



The Blurb



Newsletter of The Phil-Mont Mobile Radio Club

62 Years of Public Service, 1949 to 2011

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May 2011



**Doug Crompton, WA3DSP with W3AOK, WU3I, W3RM and K3GBA
at the new Bucks County off site receiver/auxiliary link transmitter**



The equipment cabinet and the building housing it and the antennas

W3QV/R work is almost complete, pictures page 4, 5

<i>The Blurb</i> is published monthly by and for the members of The PHIL-MONT MOBILE RADIO CLUB, Inc., whose purpose is to promote Amateur Radio in general, and Mobile Radio in particular. <i>Copying and quoting</i> is permitted with a credit line. We gladly exchange publications with other amateur radio clubs. Requests should be sent to the Editor. <i>Subscriptions</i> are available to non-members for \$12, addressed to the Treasurer. Editor: Rick DeVirgiliis ND3B nd3b@arrl.net 215-908-7225 Club Archivist: Gwen Patton NG3P ng3p@arrl.net 610-630-9862 Labels and mailing: KB3IV Submissions deadline: All copy must be in the hands of the Editor by the 20th of the previous month.		Directors: W3AOK (11) WA3KIO (11) N3XKE (11) KB2ERL (12) W3STW (12) WU3I (12) ND3B (A)	Contact Phil-Mont: P.O. Box 88 Abington, PA 19001 http://www.phil-mont.org Website: Eric N3QV & Andrew KC2PMW For club information: Contact any club officer, or the repeaters listed below. Address or club directory changes and articles for the membership e-mail list should be sent to: KB3IV
		Sunday Morning Net Schedules • 2 Meter/ 70cm Net..... at 0930L on W3QV repeater • 10-on-10 Net at 1000L 28.393 MHz USB (±QRM) • 75 meter Net at 1020L 3.993 MHz LSB • ARES at 2100L on the W3QV repeater	
Committees Archives: NG3P Audit: NS3K Blurb folding: KB3IV & N3GLU Directory: KB3IV	DX: N3MT Emerg.Coar: K3HWE Field Day: KE3QB Internet: N3QV & KC2PMW Membership: N3XKE	Net Control: KB3IV Publicity: W3RM Program: Club VP Public Service: KE3QB Refreshments: W3AOK Repeater: W3AOK	Scholarship: W3RM Skywarn: WX3PHI Sunshine: N3GLU VE Program: NS3K Welcome: N3UBY Youth: N3MT

All visitors are welcome!

The club meets at 7:30 PM on the *second* non-holiday Wednesday each month except July and August at **Roxborough Memorial Hospital**, 5800 Ridge Avenue, Philadelphia, PA 19128
Maps and directions are available at www.phil-mont.org.

License Examinations are held on the fourth **non-holiday Thursday** each month at **Community Ambulance Association, 1414 E. Butler Pike, Ambler PA 19002**
Registration begins at 7:00 P.M. Applicants should contact Jim McCloskey NS3K at 215-275-2979 or jmccloskey@msn.com for the latest information.

Club Stations W3QV/R: The Jim Spencer Memorial Repeater System
Ridge & Port Royal Avenues, Philadelphia, PA **Trustee: W3RM**
147.03 MHz + PL 91.5 Hz 444.80 MHz + PL 186.2 Hz
Reach us on EchoLink through W3QV-R
W3AA Trustee: WU3I
W3EM: Field Day/special event station Trustee: N3QV

The Officers

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Asst. Treas: N3MT Michael P. Taraborrelli michaelmt_1999@yahoo.com

The Prez Sez ...

Hello Phil-Mont,

Our April meeting program was presented by K3DS, Dennis, who showed us how to design antennas using EZNEC software. We could see where our signals would be going with any given configuration of antenna we conjure up. Thank you to Dennis for his informative presentation.

Speaking of antennas, get yours ready for Field Day on June 25th & 26th. I have requested that members planning to attend FD, notify Carmen, KE3QB, or me about which band and mode you wish to operate. We have to coordinate the operation and need your input as soon as possible. We have already had requests and have made some assignments. This year we have reserved two adjoining sites, which will allow the proper deployment of operating positions and antennas in a manner which will mitigate past interference problems between stations. We can't wait until the week of FD to make our final plans. Our resident nutritionist needs to know how many will be attending so he can design the menu and order the proper amounts. If you have been to Phil-Mont FD in the past, you know what to expect from Chef Steve. Let us hear from you now.

Did I just say "speaking of antennas"? Well do I have news for you. Our repeater system has new antennas and features. On Friday, April 16, we replaced our old and decrepit VHF Station Master antenna with a brand new one. The performance is amazing. No more static and crackling when the wind blows. It was tested the next day when the weather turned very windy. The repeater can be heard clearly at greater distances and hears

incoming signals much better. The UHF system could not be worked on that day because the installer was afraid he would be blown off the tower as the winds picked up speed. He will be returning very soon to complete his work.

Good news #2. We have a new offsite remote receiver in Bucks County again. Many of us have missed the coverage our former site in Southampton gave the system. This unit was installed Thursday April 20 with the antenna at approximately 410 ft above sea level. We will be monitoring the performance of the site and will make any necessary adjustments to the system as needed. You will find pictures of the main and offsite equipment installation elsewhere in this issue of the Blurb.

Lastly, our May general meeting program will be a Power Point presentation on the newer digital modes, NBEMS, OLIVIA, JT65-HF, WSPR, and a live demo using these modes on HF. Joe Vilardo, K3JV, who is well versed in these operating modes, will present this program.

I hope everyone had enjoyable holiday activities the past few weeks of April. Looking forward to seeing you at the upcoming meeting and hearing you on the new and improved Jim Spencer Memorial Repeater System. I'm sure he would be proud of the hard work put in by those involved.

de Ed, KB3IV

Phil-Mont Birthdays & Tidbytes

May Birthdays

02 Audrey Uebelhoer KB3UFX
05 Paul Policarpo N3PP

15 Greg Malone N3FSC
James Kavanagh KB3USZ
17 Herb Scott N3OLK

More birthdays →

28 Peggy Kaufmann KB3DID

29 Maggie Leber K3XS

30 William Chedeville W3GQD

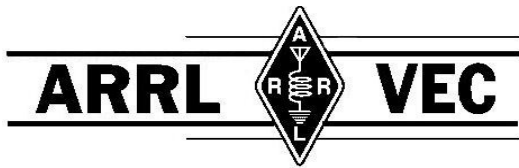
Membership Stats

At press time PMRC had:

85 Full Paid Members

4 Youth Members

1 Honorary Member



***This month's Thursday evening VE session
is on the 26th.***

As always, many thanks to our VE team!

From the Secretary

PMRC BoD Meeting Minutes, April 6, 2011

KB3IV began the meeting at 2030.

Attending the meeting were Ed, KB3IV; Steve, WU3I; Fred, WA3KIO; Bob, KB2ERL; Dick, W3RM; Gene, N3XKE; Rick, ND3B; and Jen KB3MIV.

W3RM reviewed the finances. The members spoke about the repeater. The repeater is repeating. The Antenna project is in the works. An offsite repeater for Bucks County was discussed. Notice was given that there are two more sets of meetings before our summer break. Our next major event is Field Day. The main event in the fall is the MS150. The members were planning a photo on field day with all members and their vehicle license plates. Field day is for everyone. Make sure you bring your friends and family! Ideas of a social event over the summer were kicked around for all interested

members to get together. There are exciting programs planned for each general meeting up to the break. Programs for the fall are open for suggestions. The meeting was adjourned at 2120.

PMRC General Meeting Minutes, April 13, 2011

Ed, KB3IV, called the meeting to order at 1955. 25 people were present.

Congratulations to Bob Thomas W3NE for winning the 50/50. NS3K reported on the recent and upcoming VE classes. KB3IV spoke about members returning to the club. W3AOK reported on the repeater. The new antenna work will be starting. W3AOK also modeled the 2011 Field Day shirt. Speaking of Field Day, it is right around the corner. We have retained two sites this year at the Fort Washington State Park location. We are planning to take a club photo that weekend with members holding their vanity plates. All are encouraged to come and participate in the fun, the contest and the photo. The day and time will be determined at a later date. Warminster Hamfest is coming up May 1st. KB3IV spoke about a social event for the club over the summer break, a possible bus trip to ARRL Headquarters. There are three scholarships available from the club this year. KC2PMW spoke about the club's website and recent upgrades he has worked on. KB3IV introduced the guest speaker, Dennis Silage, K3DS; he presented information on an Antenna Modeling Software program "EZNEC."

KB3IV ended the meeting at 2130.

de Jen, KB3MIV with the help of N3XKE.

de Jen, KB3MIV

Antenna work at W3QV/R



Chris from Land Mobile Corp works aloft



Chris looks like Spiderman from here



Ain't she a beauty?

Weather permitting, work will be finished soon.

Radio Stores ... 'N' More

by Bob Thomas, W3NE

The ARRL Guide to Antenna Tuners A Book Review

The American Radio Relay League has been a vital part of my amateur life ever since purchase of my first *QST* in 1946. That led to awareness of annual editions of the (then) venerable *Radio Amateur's Handbook*, which sold for a paltry \$1.00. Those gold mines of information were eventually supplemented by other invaluable ARRL books,

including *How to Become a Radio Amateur*, *Learning the Radiotelegraph Code*, and seldom noticed *Understanding Amateur Radio*, by George Grammer – a down-to-earth study guide of basic electrical and RF theory. Building the Lecher Lines¹ and performing experiments with them at UHF as described by GG imbued a life-long appreciation of the fundamental nature of standing waves. Reading the ink off those books eventually led me to copy W1AW nightly code practice transmissions on 3555 kc. in the summer of 1950. Without the ARRL publications and W1AW, I would not have obtained a ticket, so it's obvious how much they, and the ARRL in general, are cherished at W3NE. Having said all that, however, we come to this book review. Sorry, ARRL, but it isn't entirely pretty.

For the last couple of years I have been experimenting with various 80- and 40-meter antennas for operation at my noise-ridden third floor apartment. A key factor in all systems tried so far has been proper matching of the antenna to the transmitter. Short wire antennas used with or without loading contrivances often present weird complex impedances requiring an unconventional matching network that results in squirley tuning. Therefore, I was elated to learn that ARRL just introduced a new book: *The ARRL Guide to Antenna Tuners*, by Joel Harris, W1ZR. Mr. Harris is Technical Editor of *QST*, writes "The Doctor Is In" monthly column of practical advice in that magazine, and is a prolific author of technical articles and ARRL books. Here, I thought, will be practical answers to what I need, so I immediately ordered a copy sight unseen from Amazon with free shipping, avoiding the additional \$10.50 charged for shipping by ARRL – a dubious benefit of membership.

I'm afraid I got off to a bad start after reading this book's sophomoric opening paragraph. W1ZR likens an antenna tuner to a power supply that "matches" a 120 V ac power line to the 13.8 V dc input of a transceiver. Really! So, for all you dummies out there, an antenna tuner is like a power supply for RF. There is already enough dumbing down in ham radio without this sort of drivel. That is followed by an entire page devoted to three simple block diagrams depicting a) tuner between a transmitter and a long wire antenna, b) tuner

connected to a 50-ohm coax transmission line feeding an antenna and, c) tuner remotely located at an antenna. The text then explains various unbalanced tuner circuits, including untuned transformer-coupled, L-network, highpass and lowpass T-networks, and Pi-network. However, the author incorrectly appends the comment that all “provide equivalent performance” without noting that while *lowpass*-T and Pi networks inherently attenuate transmitter harmonics, highpass networks so often appearing in amateur literature and commercial products, provide no such benefit for harmonic reduction.

Helpful plots of typical SWR response for 80- and 40-meter antennas illustrate why a tuner is needed for covering an entire band, and this is supplemented with a clear, concise sidebar explanation of SWR and its relationship with antenna impedance. Use of tuner controls is described, noting that if multiple minimum-SWR adjustments are found, the one with the least inductance will produce best performance. The author opines lack of an RF ammeter in the output of today’s tuners, a point well taken in view of the crucial importance of antenna *current* for optimum results regardless of what is indicated by the highly revered SWR meter. Photos of several commercial tuners, are shown including a vintage Johnson Matchbox, which still finds favor among hams. W1ZR thankfully explodes the myth of the “perfect” antenna whose SWR is claimed to be unity over an entire band when, in reality, it’s fed with a transmission line so long that line losses mask what is actually going on at the antenna.

Continuing with transmission lines, W1ZR explores the advantages and disadvantages of coaxial cable, open wire line, and “window line” (Newspeak for *ladder line*). This section is preceded by a description of a program on a CD included with the *ARRL Antenna Book*, known as “TLW for Transmission Lines for Windows,” that enables rapid calculation of transmission line performance. (A similar program by AC6LW called “TLDetails” is available with other useful antenna software free at: <http://www.ac6la.com/>) Thank goodness W1ZR lays out all the disadvantages of feeding a balanced antenna with coax, inviting stray RF issues that are widely ignored by many hams who could at least

ameliorate those problems with ferrite-bead chokes, particularly for multi-band dipole antennas.

Co-located and remote tuners are treated in depth with a practical example that shows power delivered to an antenna can be increased more than six times, under high SWR conditions, even with low-loss coax, by using a tuner located directly under an antenna rather than at the transmitter. This is followed by a chapter describing various types of baluns, their basic design, advantages and disadvantages, and how they are applied. In that regard, the next section, which describes balanced antenna tuner circuits, there is an illuminating discussion on unbalanced tuners with a balun in contrast to a more complex dedicated balanced tuner. By the way, the title page of this chapter is illustrated with a second picture of our old friend, the Johnson Matchbox!

Chapter 14 is a rehash of *QST* product reviews for high power unbalanced antenna tuners from Ameritron, MFJ, Ten-Tec, and Palstar, and a gaggle of automatic tuners. This is followed by a very short discussion of balanced- T highpass network tuners and one with an unbalanced L-network. Once again, there is no mention that all the highpass tuners (series-C/shunt L) described here lack the harmonic suppression of lowpass (shunt-C/series-L) circuits. Alas, the late W2OBJ, outspoken champion of the latter configuration, must be spinning in his grave over this omission! Of course the excuse for resorting to highpass circuits is that they can be realized with two variable capacitors, whereas, a lowpass tuner requires two expensive variable inductors, something not many hams will stand for today. The history, basic concept, and specifications of the Johnson Matchbox are presented in accurate detail at the close of this chapter. Speaking of the Matchbox, however, it is illustrated *two more times(!)* in this chapter, once on the title page along with three modern tuners, and again in an identical illustration twenty-five pages later.

The last chapter is primarily devoted to reprints of two *QST* articles describing tuners to match a 43-foot vertical antenna, which has come in vogue recently. And finally, there is exactly what I bought this book for: A short (very short) section on building your own HF tuner that includes suggested component values and photos of typical

construction for highpass, pi, and L-networks, illustrated with photographs showing actual construction. The final section briefly covers hairpin loops for tuners covering 10 meters through 70 cm, again lifted from a *QST* article.

Despite my minor criticisms, W1ZR has done a quite creditable job with fresh, illuminating editorial content. As a builder I would have preferred more emphasis on home construction, but ARRL and its authors cannot dismiss the trend for instant gratification that has swept all hobbies that were once the province of individual achievement. So the overall content of the book is what it is. What the book is not, however, is an example of the best that can be done with desktop publishing; it is the antithesis of that! Photographs are muddy, without detail, and completely lacking in gray scale. I reviewed photographs in a 1934 ARRL *Handbook*, and they all were all much clearer with excellent contrast and abundant detail. Perhaps the photos in the review book are so bad because they are printed on the rough surface of cheap, thick paper. The book's sloppy editing is still another matter. Thirty of the book's measly 157 pages are completely blank or have less than a quarter of a page of text. There is no excuse for repeating an illustration *four* times. Slap-dash production necessitated inclusion with the First Edition an Errata Sheet listing six corrections; a completely new Index: and a totally omitted Appendix in which W1ZR takes the mystery out of logarithms and decibels, and explains how to use Windows Calculator for dB computation. On an encouraging note, the current *ARRL Letter* lists a personnel advertisement for a Book Editor, so maybe there is hope for the future!

One last comment. We all know shipping costs have skyrocketed in recent years. However, there is no reason a book purchased directly from ARRL should be saddled with a shipping charge of nearly half the book's price. The ARRL is imposing a flat rate on all its customers for the convenience of the ARRL Mail Room. For example, shipping the review book anywhere in the U.S. would cost \$4.95 by USPS Priority Mail, and only \$2.82 by Media Mail. Allowing a dollar for handling. Media Mail would still cost one-third the current charge. Why should U.S. hams be penalized by a world-wide flat rate set by the *American* Radio Relay League? It's

high time the League stopped over-charging for printed matter shipped to U.S. customers, especially its supportive domestic members.

¹ Lecher Lines are comprised of two parallel conductors on an insulated frame. The line is excited by a UHF generator through a coupling loop. The frame design permits a shorting bar to be slid along the transmission lines to change their physical, hence electrical, length. An RF field strength detector is also arranged to slide along the frame. Moving the detector along the transmission line reveals rising and falling field strength – standing waves. By changing test frequency, line length, and termination, variations in standing waves may be observed. Lecher Lines are an ideal tool for studying the character of RF intensity along a transmission line.

Warminster Hamfest is on May 1st

Please visit their website and see the flyer for details at:

http://www.k3dn.org/WARCHAMFEST2011_flyer.pdf

For Sale

NPC 109R Power Supply

13.8v 25 amps

\$40.

Call Frank KB3TEZ @ 267-303-8819

6 foot telephone relay rack on castors,

Optoelectronics FC-50 frequency counter,

ARRL handbooks 1933 - onward

Kreco 10 meter coaxial vertical antenna,

Antique headphones,

Multimeters, old technical books and parts.

Contact Tom Bohlander WA3KLR, 215-536-1331

Please feel free to forward to other clubs of which you are a member

May at PMRC ...**1st Sun – KB3TEZ NCS****4th Wed – Board Meeting****5th Thur – National Hoagie Day****8th Sun – KB3SJS NCS****Mother's Day****11th Wed – General Meeting****15th Sun – KB3IV NCS****22nd Sun – WU3I NCS****26th Thur – VE session****29th Sun – N3QV NCS****30th Mon – Memorial Day**

And don't forget the **ARES** net every Sunday night at 2100L and the new **Digital Net** Tuesdays at 1900L, both on W3QV/R

Check out this rope for your antenna project –

3/32" Braided Olive Drab - Dacron / Polyester cord

This is a high quality braided polyester cord with a breaking strength of 210 pounds. Proudly Made in the U.S.A.!

This is a gorgeous solid braid perfect for dipole antennas. Very low stretch and strong. Will withstand the weather & sun for 7 to 10 years.

PRICE \$10.00 PER 100 FEET

SOLD IN 100 FOOT LOTS

CONTACT STEVE WU3I AT

WU3I@ARRL.NET

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